

APPENDIX D

LAND DEVELOPMENT ENGINEERING REPORT

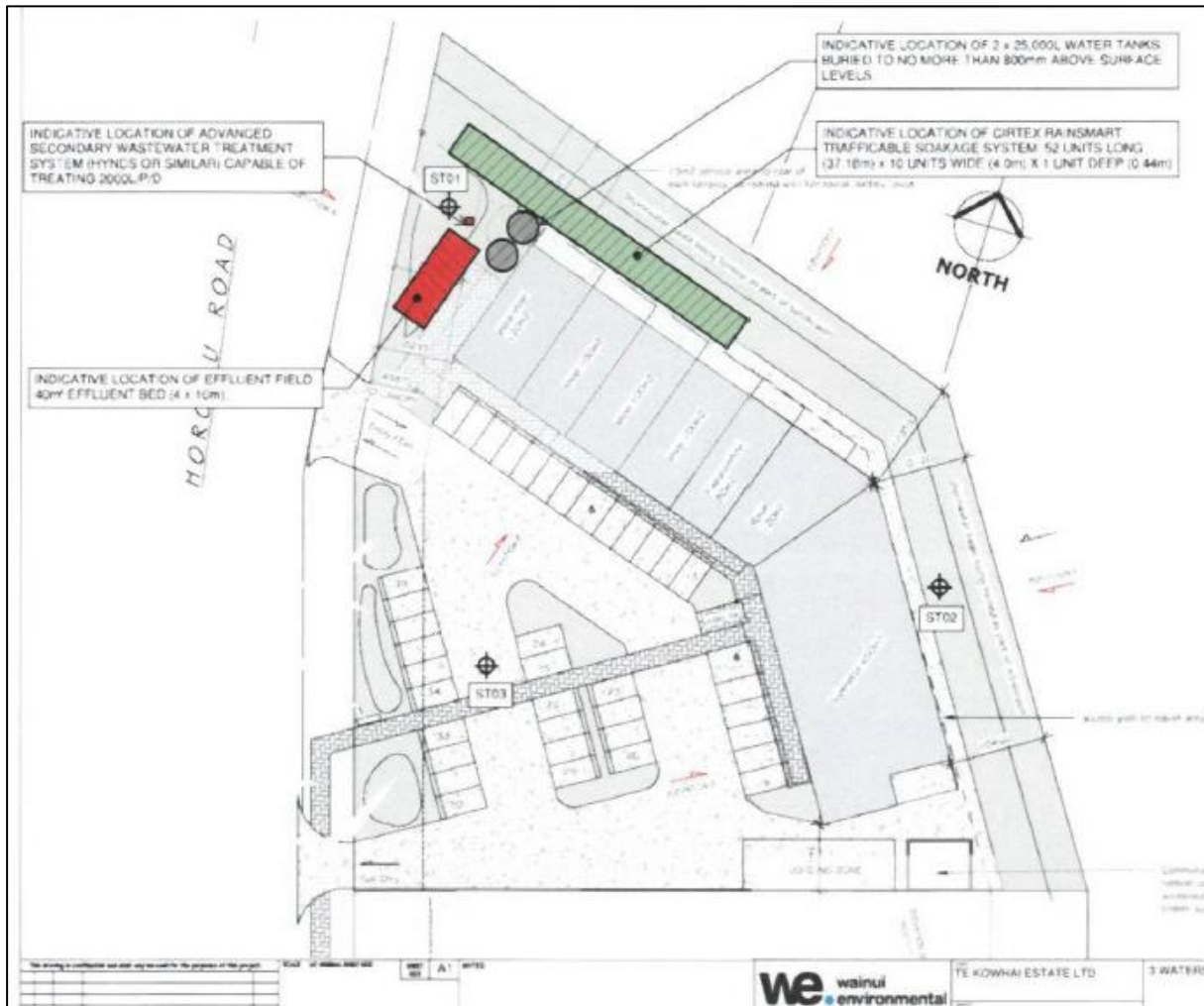
Engineering Assessment (Land Use)

Land Development Engineer	James Templeton
Planner:	Michelle Carmine – Element Planning
Date:	21 October 2020
Application No:	LUC0427/19
Applicant:	Quattro Property Holdings Limited
Property Address:	561 Horotiu Road TE KOWHAI
Legal Description	LOT 28 DP 522977

INTRODUCTION

Country Living Lot proposes change to a commercial retail activities adjacent to the Te Kowhai Church Café.

Site plan



SUPPORTING INFORMATION

The following documents that are used for engineering assessment have been submitted with the land use consent application.

Proposed Commercial Development, 561 Horotiu Road, Te Kowhai – Three Waters Management Plan by Wainui Environmental dated 4th April 2019 Ref: WE1919-01

Integrated Transportation Assessment, 561 Horotiu Rd by CKL dated 4th March 2019 Rev 1 Ref: B18163

Te Kowhai Mixed use commercial development – Transportation Review by Gray Matter dated 26 September 2019 Ref: 17-137

DISTRICT PLAN ASSESSMENT

An assessment of the proposal's compliance with the relevant rules of the Operative District Plan has been completed. In summary, the proposal triggers consent under the following rules:

Rule #	Rule Name	Comment
27.4	Earthworks	Acceptable as per Application summary. No significant changes to existing topo.
27.16	Access	Acceptable as per ITA and peer review outcomes.
27.17	Vehicle Movements	Acceptable as per ITA and peer review outcomes.

ASSESSMENT OF EFFECTS

General (include earthworks)

The site is vacant of any buildings, flat in topography and the product of a recent subdivision SUB0021/18 within the last 2 years. Access is via the boundary on Horotiu Road on the western side. The eastern boundary is bound by a Regional Drain that runs full length of the site with a 10m Waikato Regional Council Easement for access purposes.

Earthworks is required to establish the carpark, building footprint and onsite services. No changes in overland flows are expected within the earthworks extent. No retaining walls or slopes are created within the proposal. Cut and fill totals 12,111m³ over 5000m² is stated in the application to establish such works.

The WE three waters report states the flooding level RL25.61 which is the same height as the centreline of Horotiu Road plus an additional 0.3m freeboard requirement. The buildings will have a designed floor level in accordance with this report.

The Flood Hazard statement in the WE report is taken from a historical Tonkin & Taylor (RFHA) report. Filling in would be subject to Waikato Regional Council consent however identifying this as a Hazard seems out of context noting the site is on high ground and adjacent to Regional Council maintained drains.

I've requested further input on these statements to Wainui Env. Can condition the detail of the final earthworks levels at Detailed design stage.

Sediment Control can be provided at detailed Engineering stage. Operations can be managed via conditions of consent.





LDE Conclusion

The earthwork impacts can be managed sufficiently as per the Terra Summary point 6.2.4.

Future planned infrastructure

Stephen Howard (Senior Consenting and Senior Planner Watercare) has provided brief details of LTP forward planning.

Hi Te Kowhai Hearing - Planning report needs specific detail on servicing

 SHoward (Stephen) <Stephen.Howard@water.co.nz>
To  Pearl McFall;  Pranavan Kasipillai;  James Templeton

Mon 19/10/2020 11:44 am

Reply Reply All Forward

Action Items + Get more add-ins

Hi Pearl, Pranavan – cc James

I have included a quick summary of Te Kowhai servicing potential - Is this accurate. Can you add any tweaks comments?>

Proposed District Planning: Growth has been indicated by WDC policy planners in the PDP, with Country living with ability to further subdivide/reticulate should that be the future scenario. Waikato 2070 doesn't show Te Kowhai as a growth node;

Draft LTP information (W,WW, SW) prepared by WSL asset engineers includes the scenario for a wastewater connection to Horotiu. This inclusion is part of robust draft LTP optioneering;
Money pencilled in includes

- 4,000,000 for a rising main/pumping to Ports of Auckland (POAL will be easily transferred to Pukete if needed (dependent on Council decision making)

Next step would be Councillor decision making on Te Kowhai growth- this could be:

- WW reticulate to Horotiu as per the scenario below;
- Council decide this is not the place where growth \$\$\$\$ will be spent – removed from draft LTP

LTP has had Councillor workshops, no feedback has come through (or would be anticipated). Next Step will be public consultation next year. – Cheek in with strategic planners etc

Summary – draft LTP is subject to Council approval – there is a WW inclusion for later years

Wastewater:

- Asset Planning, need to at least provide costings and options for Council decision making. Te Kowhai
- Nothing guaranteed

Water supply:

- not requesting within LTPs - moving forward, idea is to move to Hamilton - Pearl add words

The details indicate that Wastewater reticulation for the Te Kowhai township has been included for the years 2028-2029. It suggests a potential pumpstation is located in Te Kowhai and will pump (6.5km) via pressured raising main to discharge at Horotiu Ports of Auckland site. Council has not made commitments to this project at this early stage, it only provides indication where future funding and growth may be considered. No commitments at this stage.

Reticulated Water supply in Te Kowhai has not been planned for within the current LTP. Should there be a demand for reticulated supply in Te Kowhai in future years, it is most likely that Hamilton City could be a possible source for this service due to locality. No commitments at this stage.

Water

No reticulated services available. Preliminary design has estimated that 2x 25kL tanks could support the commercial development and that 25 days supply is sufficient to provide for the expected demands. To provide further guarantees, an agreement could be made with a local water contractor to provide the development if required. “As part of detailed design, the above assumptions will need to be confirmed along with the proposed no. of water tanks.” The District Plan does not prohibit this mechanism for Water Supply.

Firefighting requirements and capacity has not been established within the report. The adjacent Lot at the Café has 180m³ permanent fire water supply although permissions have not been established to date. The District Plan does not require firefighting for commercial activities in the rural/country living zone. This would be a matter for Building Consent consideration. For design aesthetics, firefighting water tanks could be provided below ground level should there be a requirement at Building Consent stage.

The assumptions for water supply will require further investigation at detailed design stage to further establish:

- **The number of total water tanks required to provide adequate supply.** 2x 25kL tanks are only provisional. This assumes the commercial development will receive a rainfall event within 25 days.
- **Adequate Firefighting storage solution.** Fire fighting storage could be provided beneath the carpark areas should that be a requirement at Building Consent stage.

The LDE notes Submission item #19 point 20, 21 “that water usage and disposal estimated in the application is underestimated”. The maximum demand for water supply, capacity and loadings have not been defined at this stage of the application. The LDE suggests a Engineering design report to be conditioned and provided at Detailed Engineering design stage stating these limitations of the onsite services.

LDE Conclusion

Accepted as per Proposed Commercial Development, 561 Horotiu Road, Te Kowhai – Three Waters Management Plan by Wainui Environmental dated 4th April 2019 Ref: WE1919-01 under the condition that further details will need to be provided at detailed design stage.

Wastewater

The site is limited with available open spaces for an EDA that is separated adequately from the Stormwater Management devices. The wastewater field should also include a 50% reserve area for disposal and this has not been detailed on the plans. The final arrangement could be adjusted within the site with further considerations at detailed design stage.

Stormwater and Wastewater arrangement - Wainui Environmental have provided response on 21/09/2020 where it is possible to relocate the SW soakage systems beneath the sealed carparking area. This option enables greater green areas for effluent dripper line areas and reserve areas to meet NZS1547 (on-site wastewater standards) should the retail complex require greater wastewater demands than the information contained in the application.

The Wainui Environmental response includes; “The wastewater loadings presented in the report are preliminary and were developed based on our best estimate of flows based on the proposed use for the development. Given the limited area available for land application and reserve area, some additional work would need to be done to determine a maximum land application area available (and associated maximum WW load).”

LDE Conclusion

Final wastewater capacity limitations do exist on site, and is subject to specific design once the known Wastewater loadings are confirmed.

Acceptable as per Proposed Commercial Development, 561 Horotiu Road, Te Kowhai – Three Waters Management Plan by Wainui Environmental dated 4th April 2019 Ref: WEI919-01 under the condition will be required to limit the total onsite discharge and activity based the specific WW design capacity at detailed design stage.

Stormwater

The Three water report states “All roof and runoff from the proposed carpark and other handstand areas shall be conveyed to an underground soakage system.” The statement maybe incorrect as the roof supply will need to provide for water tank supply.

Pre-treatment is necessary before entering the soakage system.

Flooding - The LDE notes Submission item #19 point 17 where the submitter has local flooding knowledge of the area. The address at 583 Horotiu Road is adjacent to the Subdivision (SUB0021/18) for which the drainage design was undertaken with input from the Regional Council. The subsequent reformation of the Regional drains provides a direct water course to the Waipa River receiving environment.

LDE Conclusion

The drain has designed capacity to meet the demands of this catchment area. Accepted as per Proposed Commercial Development, 561 Horotiu Road, Te Kowhai – Three Waters Management Plan by Wainui Environmental dated 4th April 2019 Ref: WEI919-01 subject to conditions at detailed design stage.

Roading

50km/h speed environment. Since the Gray Matter peer review of the initial CKL ITA, progress has been made to agree on the entrance arrangement and median strip changes. Confirmation from Gray Matter has been received on 18/09/2020 that 3x Options (varying road shoulder, lane and median widths) can accommodate safe turning facilities of the retail facility integration and the existing 10.9m seal width of Horotiu Road.

The LDE notes Submission item #19 transport section point 13, 14, 15, 16 that the potential traffic conflicts have been appropriately reviewed and peer reviewed by specialist Transportation Consultants.

LDE Conclusion

Final details can be conditioned and established at detailed design stage.

PROPOSED ENGINEERING CONDITIONS

General Conditions

Prior to commencing any engineering design or construction works, the Consent Holder shall appoint appropriately qualified and competent Developer’s Representative/s, to provide all designs, supervision, certification and final signoff, in accordance with the requirements of the Regional Infrastructure Technical Specifications (RITS).

Prior to Construction

Monitoring Notification and Pre Start Meeting

The Consent Holder shall arrange and attend a pre-start meeting with the Waikato District Council Monitoring Department at least 10 working days prior to the commencement of any activities associated with this consent.

The pre-start meeting shall address:

- (a) Construction Management including Traffic Management
- (b) Methods for controlling dust, erosion and sediment runoff
- (c) Construction Noise Management Plan

Advice note

To notify Waikato District Council Monitoring Department, email monitoring2@waidc.govt.nz with the consent number, address of property and date for when the works will commence.

Construction Management Plan (CMP)

The consent holder shall prepare and submit a Construction Management Plan (CMP) to Waikato District Council's Team Leader Monitoring for certification a minimum of 15 working days prior to the commencement of earthworks associated with this consent.

The CMP shall include the following information:

- (a) Staging of works planned and the description of works including site plans;
- (b) An erosion & sediment control plan;
- (c) Detail management procedures for material, fill placement and treatment, stockpiling and disposal of unsuitable materials;
- (d) A Dust Management Plan;
- (e) Communications Plan;
- (f) Health and Safety Plan;
- (g) Providing safe pedestrian access along Horotiu Road
- (h) Address and provide a construction parking and loading management plan to ensure all parking and loading/unloading is completed within the construction site.

Detailed Engineering Design Plans

At least 15 working days prior to any construction, detailed engineering plans and a design report (stating the site-specific limitations, load capacity and methods to measure and monitor activities) shall be submitted for Engineering Plan Approval for:

- Water supply
- On-site Wastewater and maximum design loadings
- Stormwater management including treatment

- Roading infrastructure onsite and in the public road corridor (including markings and signage)
- Earthworks final levels
- On-going monitoring considerations for management of combined wastewater loadings for the lot.

Detailed Designs shall be in accordance with the following:

- Proposed Commercial Development, 561 Horotiu Road, Te Kowhai – Three Waters Management Plan by Wainui Environmental dated 4th April 2019 Ref: WE1919-01
- Integrated Transportation Assessment, 561 Horotiu Rd by CKL dated 4th March 2019 Rev I Ref: B18163
- Te Kowhai Mixed use commercial development – Transportation Review by Gray Matter dated 26 September 2019 Ref: 17-137
- The Waikato District Plan (Waikato Section)
- The Regional Infrastructure Technical Specifications
- and shall take into consideration any recommendations from the Engineering Design Report, to the satisfaction of the Land Development Engineer, Waikato District Council.

During Construction

The water/stormwater/wastewater/roading infrastructure (including markings and signage) shall be constructed in general accordance with the Approved Engineering Plans, Approved Engineering Design Report and the Regional Infrastructure Technical Specifications to the satisfaction of the Land Development Engineer, Waikato District Council.

Post Construction

Geotechnical Completion Report

After completion of the earthworks, and prior to undertaking any building works, the consent holder shall provide a “Statement of Professional Opinion as to Suitability of Completed Earthworks” completed and signed by a Geo-professional (who carries appropriate professional indemnity insurance for the works being supervised/certified) to certify that the site is suitable for:

- (a) Erection of commercial buildings, and;
- (b) Provide details of any specific foundation design considerations/limitations necessary for the construction of commercial buildings.

The format for the “Statement of Professional Opinion as to Suitability of Completed Earthworks” shall be as per Volume 4, Part 2 checklist 2.2 of the Hamilton City Council Development Manual.

The Statement is to be accompanied by the following:

- (a) A schedule with dates/results etc of all supervision and testing undertaken to certify the areas of cut/fill, and

- (b) An as-built plan of the earthworks, clearly showing the areas/depths of cut and fill, and defining areas of fill which have been engineered, and those areas of fill which have not been engineered.

The above is to be submitted to, and gain the approval of, the Waikato District Council's Team Leader-Monitoring prior to undertaking any building works on site.

As Built Information

As Built information for all works covered in the approved Engineering Design Plans shall be provided to Council for acceptance. As Built information shall be in accordance with Section 1.7.3 of the requirements of the RITS and shall also include all details of street lighting installed, in a format suitable for entering into Council's RAMM database.

The Consent Holder shall:

- (a) Appoint a suitably qualified and competent person, to the satisfaction of Waikato District Council's Roading Compliance Officer who shall be responsible for gathering all information necessary for RAMM data collection for the construction of Wellington Street.
- (b) This representative shall gather and submit RAMM data, which shall conform to Waikato District Council's ROAD ASSET DATA STANDARD SPECIFICATION, to the Waikato District Council's Roading Compliance Officer for assessment and technical certification. All RAMM data shall be provided on the prescribed forms.

Certification

A 'Contractors Certificate – construction', for each separate work undertaken by each individual contractor as part of the consent, shall be provided to the satisfaction of the Land Development Engineer, Waikato District Council.

Advice Note: An acceptable format for certification upon completion of works can be found in the NZS4404-2010 Schedule 1B (Contractor's certificate upon completion of land development).

A 'Certificate of Completion of Development Works' prepared and signed by the Developers Representative/ a suitably qualified professional, shall be provided to the satisfaction of the Land Development Engineer, Waikato District Council, to confirm that all works have been carried out in accordance with the approved plans and appropriate standards.

Advice Note: An acceptable format for a 'Certificate of Completion of Development Works' can be found NZS4404-2010 Schedule 1C (Certification upon completion of land development).

Advice Note:

The activities associated with this consent must be undertaken in accordance with Stormwater report Proposed Commercial Development, 561 Horotiu Road, Te Kowhai – Three Waters Management Plan by Wainui Environmental dated 4th April 2019 Ref: WE1919-01. Acceptance of the Stormwater Report does not constitute compliance with the Waikato Regional Council regional plan requirements.

Signed By

A handwritten signature in blue ink, appearing to read 'J. Templeton', with a stylized flourish at the end.

James Templeton
Land Development Engineer
Date: 27 October 2020